

Education

- 2020 **Ph.D at Inria SAM, Université Côte d'Azur, France**, in Automatic, Signal and Image Processing.
- 2021 **Data Science bootcamp at Le Wagon, Marseille**, immersive data coding bootcamp.
- 2016 **Master of Science at Université Côte d'Azur**, in Computational Biology and Biomedicine.
- 2015 **Diplôme d'Ingénieur de l'Ecole Centrale de Lyon**, double degree in Computer Science and Imaging with Ecole Supérieure Polytechnique at Université Cheikh Anta Diop of Dakar, Senegal.

Experience

- August 2022 **Postdoctoral Research Associate, Princeton University, USA**,
Ongoing
 - Investigation of Artificial Intelligence and Materials Science for applications to Medical Imaging.
- 2021 **Independent Researcher & Data Scientist, Marseille, France**.
- April-August
 - Deep Learning model Uncertainty assessment in Breast cancer classification.
 - Representation/latent space generation and t-SNE visualization.
 - Tree Detection in urban areas of Marseille within Hack4Nature project.
 - Transfer learning: improving DeepForest model with urban images.
- 2016-2020 **Ph.D Candidate at Inria SAM, Université Côte d'Azur, France**,
Three-dimensional Polarized Light Imaging: Towards Multiscale and Multimodal Analysis with Diffusion Magnetic Resonance Imaging.
 - Computational Neuro-Imaging: Mathematical modeling and implementation.
 - Diffusion Magnetic Resonance Imaging (MRI): in-vivo reconstruction and validation.
 - 3D-Polarized Light Imaging (3D-PLI): Simulation and reconstruction of nerve fibers.
 - Deep Learning for diffusion MRI analysis: Spherical CNN for brain tissue microstructure estimation.
- 2016 **Research Intern at Inria SAM, Université Côte d'Azur**,
5 months *Master thesis: Towards Diffusion MRI-based Tractography via 3D-Polarized Light Imaging*.
 - Solving 3D-PLI inclination sign ambiguity by extending Total Variation image restoration method to 3D.
 - Mathematical modeling, simulation and 3D-image analysis of brain nerve fibers (Python, Nibabel, Matlab).
- 2015 **Engineer Intern at KLEE Group, Plessis-Robinson, France**.
6 months
 - Statistical analysis and prospecting tool for the Conseil Supérieur du Notariat de France.
- 2013-2014 **Industrial Research Engineer at IFPEN Energies Nouvelles & Ecole Centrale Lyon, France**.
8 months
 - Design a new industrial spray-dryer to dry aqueous and organic solutions.

Selected Publications

Alimi, A., Deslauriers-Gauthier, S., Matuschke, F., Müller, A., Muenzing, S. E. A., Axer, M., Deriche, R.: Analytical and fast fiber orientation distribution reconstruction in 3D-Polarized Light Imaging. *Medical Image Analysis*, Volume 65, 2020, 101760. [Link to Journal](#)

Sedlar, S., **Abib A.**, Papadopoulo T., Deriche R., Deslauriers-Gauthier S.: A spherical convolutional neural network for white matter structure imaging via dMRI. *MICCAI 2021 – 24th International Conference on Medical Image Computing and Computer Assisted Intervention*, Sep 2021, Strasbourg, France. [Link to paper](#)

Alimi, A., Deslauriers-Gauthier, S., Deriche, R.: Towards validation of diffusion MRI tractography: bridging the resolution gap with 3D-Polarized Light Imaging, *ISMRM 2019 - International Society for Magnetic Resonance in Medicine*, M 2019, Montreal, Canada. [Link to paper](#)

Sedlar, S., **Alimi, A.**, Papadopoulo, T., Deriche, R., Deslauriers-Gauthier, S.: Spherical convolutional neural network for diffusion MRI analysis. In Sophia Summit (2019, November), Sophia Antipolis, France. [Link to presentation](#)

Alimi, A., Usson, Y., Jouk, P.S., Michalowicz, G., Deriche, R.: An analytical fiber ODF reconstruction in 3D-Polarized Light Imaging. ISBI 2018-IEEE International Symposium on Biomedical Imaging, 2018, Washington D.C., USA. [Link to paper](#)

Alimi, A., Pizzolato, M., Fick, R.H.J., Deriche, R.: Solving the inclination sign ambiguity in three-dimensional Polarized Light Imaging with a PDE-based method. ISBI 2017-IEEE International Symposium on Biomedical Imaging, 2017, Melbourn, Australia. [Link to paper](#)

Talks

- 2019 Talk at ISMRM 28th Annual Meeting & Exhibition, Montreal, Canada
- 2018 Talk at 15th IEEE International Symposium on Biomedical Imaging, ISBI, Washington DC, USA
- 2017 Talk at 14th IEEE International Symposium on Biomedical Imaging, ISBI, Melbourne, Australia

Awards & Honors

- 2019 Magna Cum Laude Award at ISMRM 28th Annual Meeting & Exhibition, Montreal, Canada
- 2011-2016 Senegalese Government Scholarship
- 2008 Laureat du Concours General (Senegalese Olympiad, Gymnastics)

Teaching

- 2017-2018 Teaching Assistant at Department of Computer Science at Sophia Antipolis IUT, Université Côte d'Azur
Software system design using Unified Modeling Language, Supervizing two batches of 16 and 24 students.

Skills

- Data Science Machine Learning (SVM, XGBoost, ...), Deep Learning (CNN, RNN, NLP), Maths & Statistics
- Programming Python, Pandas, Seaborn, Scikit-learn, Keras, Tensorflow, Matlab, SQL, Git, Docker, CI/CD, GCP
- Business Communication & Collaboration, Dedication, Long-life learning, Market & Product knowledge
- Languages Wolof (native), French (native), English (bilingual)

Certifications

- 2021 **Machine Learning**, Stanford University authorized and offered online through Coursera.
- 2021 **Deep Learning**, Hands-on Artificial Neural Networks by Udemy (Scikit-image, Keras, Tensorflow,...).
- 2021 **Artificial Intelligence**, Full-stack Developer in Machine and Deep Learning, Convolutional Neural Nets, Recurrent Neural Nets, database, xml, API, Git, Docker, Heroku, Streamlit, FastAPI (in preparation).

Associative & Personal Interests

Gymnastics award winner in national competitions in Senegal, 2 years amateur training in France.
Team Captain of 20+ Football games, Fitness, Swimming. Travelling & discovering Cultures and Food.